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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,469	04/22/2005	Fabio Vignoli	NL 021053	1612

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BRIARCLIFF MANOR, NY 10510

EXAMINER

SAINT CYR, LEONARD

ART UNIT	PAPER NUMBER
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2626

MAIL DATE	DELIVERY MODE
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11/09/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/532,469	Applicant(s) VIGNOLI, FABIO	
	Examiner LEONARD SAINT CYR	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Re-open prosecution after appeal brief

1. In view of the supplemental appeal brief filed on 08/17/09, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below.

2. Applicant's arguments with respect to claims 1 - 19 have been considered but are moot in view of the new ground(s) of rejection.

Appellant argues that neither Schroder, nor Kaufholz nor Kataoka teach an orientation and distance relative to the microphone array, and the speech control unit

being configured to discriminate between sounds originating from users who are located in front of each other (Appeal brief, pages 11- 14).

Drawings

3. The drawings are objected to because the unlabeled boxes shown in the drawing should be provided with descriptive text labels. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1- 10, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroder et al. (US Patent 7,136,817) in view of Kaufholz (US Patent 7,050,971), and further in view of Rajan (US PAP 2002/0150263).

Regarding claims 1 and 9, Schroder et al. discloses a speech control unit for controlling an apparatus on basis of speech, comprising:

a microphone array, comprising multiple microphones for receiving respective audio signals (see col. 4, lines 44 - 46); and

a speech recognition unit for creating an instruction for the apparatus based on recognized speech items of the speech signal (see col. 4, lines 60-62, where the commands are recognized speech items), and a keyword recognition system for recognition of a predetermined, keyword that is spoken by the user and which is represented by a particular audio signal and the speech control unit being arranged to control the beam forming module (see col. 4, lines 60 - 62, where the commands are the predetermined keywords spoken), on basis of the recognition of the predetermined keyword, in order to enhance second components of the audio signals which represent a subsequent utterance originating from a second orientation of the user relative to the microphone array (see col. 2, lines 38 - 44);

wherein the recognition of the predetermined keyword at the second orientation so that the subsequent utterance originating from the second orientation are accepted

("The input command for controlling the voice-controlled system is used in method step 8, for example for menu control or navigation"; col.2, lines 39 – 44, col.3, lines 49 – 52);

wherein the subsequent utterance originating from the second orientation will be discarded if not preceded by the recognition of the predetermined keyword originating from the second orientation ("The input command for controlling the voice-controlled system is used in method step 8, for example for menu control or navigation"; col.2, lines 39 – 44, col.3, lines 49 – 52; col.1, lines 44 - 47).

Schroder et al. do not disclose a beam forming module for extracting a speech signal of a user; calibrates the beam forming module to allow the user from the first position to the second position. However this feature is well known in the art as indicated by Kaufholz. Kaufholz discloses a speech recognition apparatus that utilizes a beam former that creates a higher performance and resolution of the resulting microphone signal. The beam former may also select or even tract an audio source. Typically, the loudest source signal is identified (see col. 5, lines 8-15). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a beam forming module with the apparatus of Kaufholz for the benefit of a higher performance and resolution of the resulting microphone signal.

However Schroder et al in view of Kaufholz do not specifically teach that utterances of other users at other positions are discarded, the second position including an orientation and a distance relative to the microphone array, and the speech control unit being configured to discriminate between sounds originating from users who are located in front of each other.

Rajan discloses that current techniques employ an array of microphones and an adaptive beamforming technique **in order to discard (“isolate”) the speech from one of the users**. The computer system 7 is also arranged to process the signals from each of the microphones in order to discriminate (**“separate”**) the speech signals from each of the users 1-1, 1-2 and 1-3 (**users 1-1, and 1 - 3 are located in front of each other**). The predetermined curved plots used may be circular arcs, in which case, the spectrogram processing module 33 **will be able to estimate, not only the orientation (“direction”) from which the speech emanated, but also the distance from the microphones of that user** (paragraph 2, lines 6 – 8; paragraph 22, last six lines; paragraph 57, last six lines).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to **separate** the speech signals from each of the users 1-1, 1-2 and 1-3 as taught by Rajan in Schroder et al in view of Kaufholz, because that would help **effectively identifies the speech source (j) from which the corresponding signal value has been received** (paragraph 45).

Regarding claim 2, Schroder et al. further disclose that the keyword recognition system is arranged to recognize the predetermined keyword that is spoken by another user and the speech control unit being arranged to control the beam forming module, on basis of this recognition, in order to enhance third components of the audio signals which represent another utterance originating from a third position of the other user relative to the microphone array (see col. 2, lines 35-44).

Regarding claim 3, Schroder et al. further disclose that a first one of the microphones of the microphone array is arranged to provide the particular audio signal to the keyword recognition system (see col. 4, lines 56-62).

Regarding claim 4, Schroder et al. further disclose that the beam forming module is arranged to determine a first position of the user relative to the microphone array (see col. 4, lines 51-56).

Regarding claim 5, Schroder et al. further disclose that an apparatus comprising: a speech control unit for controlling the apparatus on basis of speech as claimed in claim 1 (see col. 4, lines 60-62); and

processing means for execution of the instruction being created by the speech control unit (see col. 4, lines 60-62).

Regarding claim 6, Schroder et al. discloses an apparatus as claimed in claim 5, characterized in being arranged to show that the predetermined keyword has been recognized (see fig. 1, col. 3, lines 32- 45).

Regarding claim 7, Schroder et al. discloses an apparatus as claimed in claim 6, characterized in comprising audio generating means for generating an audio signal in

order to show that the predetermined keyword has been recognized (see fig. 1, col. 3, lines 32-45).

Regarding claim 8, Schroder et al. discloses a consumer electronics system comprising the apparatus as claimed in claim 5 (see col. 4, lines 63-65).

As per claims 10, and 15, Kaufholz further discloses that the user is informed by indications that the speech control unit is not active, is in active state and ready to receive the utterance or is in a state of calibration ("the controller can also check which part is active at the moment of receiving input from the user"; col.7, lines 42 - 54).

6. Claims 11 -14, and 16 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroder et al. (US Patent 7,136,817) in view of Kaufholz (US Patent 7,050,971), and further in view of Rajan (US PAP 2002/0150263), and further in view of Kataoka (US PAP 2002/0181723).

As per claims 11-14, and 16 -19, Schroder et al., in view Kaufholz, and further in view of Rajan do not specifically teach that indications include an animal in a sleeping state indicating inactive state or in an awake state indicating active state; wherein the progress of the active state is indicated by angle of ears of the animal; wherein the ears are fully raised at a beginning of the active state, and fully down at an end of the active state; wherein the animal has an understanding look when the utterance is recognized and a puzzled look when the utterance is not recognized.

Kataoka discloses that the direction of the targeted voice then can be inputted to the servo system, **whereby a face, eyes, an upper body, or the like of the robot can controlled accordingly (paragraph 38, last five lines); but** Kataoka does not teach active and inactive states of the speech control unit based on indications states of an animal. **However, since Kataoka disclose that the robot may take a form of an animal such as a mouse, a dog, a cat, or the like...after all, it is satisfactory so far as the robot has capability of the posture control, head motion or eye direction shifts toward the direction of the sound source** (paragraphs 36, last five lines; paragraph 38, last four lines). One having ordinary skill in the art at the time the invention was made would have it found obvious to indicate different states through an animal in Kataoka, so that voice recognition can be performed with an input of a delay sum corresponding to the directivity direction (Abstract, last two lines).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD SAINT CYR whose telephone number is (571) 272-4247. The examiner can normally be reached on Mon- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Art Unit: 2626

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or (571)-272-1000.

LS

11/02/09

/Richemond Dorvil/

Supervisory Patent Examiner, Art Unit 2626